

# Ashutosh Pochamreddy

[ashutoshpocham@vt.edu](mailto:ashutoshpocham@vt.edu) | (703)-459-5731 | [linkedin.com/ashutosh](https://www.linkedin.com/in/ashutosh)

## EDUCATION

### Virginia Tech

*Masters in Computer Science*

**Blacksburg, VA**

GPA: 3.9 | Dec 2024

### VIT, Vellore

*Bachelors in Computer Science and Engineering*

**Vellore, TN**

GPA: 8.6 | May 2022

## PUBLICATIONS

### IntelliSMART: Intelligent Semantic Machine - Assisted Research Tool: [\(link\)](#)

Aug 2024

- Published in ACM Advances in Social Networks Analysis and Mining(ASONAM conference 2024, Italy)

### Procedure Evaluation using Language Modelling (In Progress)

**Blacksburg, VA**

- Generated a synthetic dataset of procedures using chain-of-thought prompting on GPT-4 and fine-tuned LLama-7B, Mistral-7B, and T5-13B models to identify erroneous steps.

## PROFESSIONAL EXPERIENCE

### Shell

*Software Development Engineer*

**Bangalore, India**

Aug 2022 – Sep 2023

- Designed and developed full-stack applications using Java (Java 17), Spring Boot, Hibernate, and React.js, delivering high-performance microservices-based self-checkout systems.
- Developed RESTful APIs to support self-checkout POS systems, enhancing transaction processing efficiency by 30%.
- Implemented real-time monitoring and alerting using Prometheus, Grafana, and PagerDuty, reducing incident resolution time by 40%.
- Integrated Elasticsearch to enable fast and scalable data retrieval for fraud detection and transaction analytics.
- Containerized microservices using Docker and deployed them on AWS ECS and Kubernetes.
- Developed a real-time event streaming pipeline using Apache Kafka, achieving sub-20ms latency for processing transactions..
- Designed and implemented an AI-based security assessment tool using LLMs (GPT-based CNN models) to analyze API payloads for vulnerability detection, improving security compliance by 90%.

### Ninjacart

*Software Engineer*

**Remote**

Feb 2022 – Jul 2022

- Developed and deployed a full-stack application using Spring Boot, Spring Data JPA, Node.js, React.js, Redux, and TypeScript, enhancing performance by 20% and optimizing UI/UX.
- Designed and optimized database queries using Hibernate ORM and PostgreSQL, reducing API response times by 35%.
- Built a cloud-native microservices architecture leveraging Spring Boot, Kafka, and AWS Lambda for efficient event processing.
- Implemented Kubernetes clusters on AWS EKS to manage and scale containerized applications, ensuring high availability.
- Developed reusable React components following Material UI and Storybook, streamlining UI consistency and reducing development time by 20%..

### Virginia Tech

*Research Assistant*

**Blacksburg, Virginia**

Sep 2023 – Aug 2024

- Developing and optimizing deep learning models for LLM-based natural language query processing, improving SQL query generation accuracy.
- Developing a SQL practice platform with Python (Flask), PostgreSQL, WebSockets, OAuth 2.0, and Docker, featuring real-time collaboration, automated testing, progress tracking, and analytics visualized with Chart.js, deploying on AWS.

Apr 2024 – Oct 2024

### Virginia Tech

*Graduate Teaching Assistant*

**Blacksburg, Virginia**

Aug 2024 – Present

- Guiding students in deploying and managing cloud-based applications on AWS (Lambda, EC2, S3, RDS, IAM, and CodePipeline) while teaching DevOps best practices, including CI/CD automation using Jenkins, Terraform, and Kubernetes.

## PROJECTS

### Semantic Processing LLM for Academia

- Enhanced user query accuracy by 15% using Gemini-Pro for embedding generation. Fine-tuned arXiv data with GPT-3 for optimized sentence embeddings and indexed them with Annoy for efficient document retrieval based on content similarity.

### CRM System

- Developed CRM features including lead management, contact management, opportunity tracking, and reporting using Go. Leveraged PostgreSQL for over 1M records, gRPC to cut data latency by 40%, and Kubernetes for orchestration

### Optimizing Web Application Deployment on AWS Cloud

- Designed a resilient AWS cloud architecture with EC2, S3, RDS, and Lambda, optimizing resource usage by 40%, achieving 99.99% uptime, and ensuring high availability with secure REST API endpoints via API Gateway.

## SKILLS

**Languages:** JAVA, Python, C++, JavaScript, PHP, SQL, Bash, GraphQL, HTML, CSS

**Frameworks:** Spring Boot, React, Angular, Django, Flask, NodeJS, TensorFlow, Keras

**Tools:** Kubernetes, Docker, GIT, PostgreSQL, MySQL, Terraform

**Platforms:** AWS, GCP, Azure, Linux, Web, Windows